

## **4.0 SITE EVALUATIONS AND RANKINGS**

### **4.1 Use of Evaluation Criteria**

While there are numerous potential evaluation parameters and many possible levels of weighting within each, there are no standard methods by which all wetland sites can be evaluated objectively, resulting in a single list of preservation priorities that is scientifically based and defensible. The many different important resource and site factors involved dictate a more subjective approach in assessing priorities for wetland preservation. To the extent that objective criteria can be integrated into an evaluation procedure (either to rate potential preserve and mitigation sites, or to determine the appropriateness of development), there should be site-by-site consideration of all factors, although sometimes certain factors may be weighted differently for different subregions or resource situations. Further, there are few enough sites left that support the listed species and/or constitute relatively natural situations, that a rigorous evaluation and ranking effort does not seem warranted or particularly necessary to establish priorities.

### **4.2 Site Rankings**

No rigorous ranking or single list of sites have been compiled as part of this study. Rather, several lists of sites (see Appendix D) supporting endangered species have been prepared, in generally descending order of size and significance. It should be recognized that there are numerous different resource situations that warrant protection, and it is difficult to compare (in terms of the need for preservation) small sites with sensitive species against large areas of pristine habitat without such species, or urban fragments with little waterfowl value against rural properties with good wildlife value. Examples of situations that may warrant protection, but might not rank high based on a generic evaluation scheme include solitary occurrences of unique species assemblages, special soil situations, geographic outliers, especially large or unique populations, and areas of exemplary habitat even without sensitive species currently in evidence.

General ranking of sites can be made, including overall ratings (largely proportional to sensitive species occurrences and site size), but may be more useful if subdivided into categories that could include (1) each of the endangered species, (2) soil and geographic uniqueness and representation, (3) the degree of demonstrable threat, (4) site size and extent of habitat to be saved, (5) sites with high restoration potential, and finally once individual site evaluations have been made, (6) availability and cost.

### **4.3 Priorities for Preservation**

While there are numerous factors that could be analyzed for possible rankings of the known sites, there are relatively few large, high quality sites left in the study area (C. Patterson, unpubl. field data; B. Guggolz and M. Waaland, pers. comm.). Because of the limited number of sites known to still support sizable populations of sensitive species and/or significant acreage of relatively undisturbed vernal pool habitat, the priorities for preservation include virtually all sites with viable populations of sensitive species, generally in descending order based on acreage (from larger to smaller sites). Site size is a major consideration, with small sites (generally less than about 5 acres) being much more vulnerable to outside influences and adjacent land use disturbances. Such small sites, especially if isolated or in urban areas, present difficult management and defensibility issues, and generally offer low potential to preserve, restore, or conserve wetland wildlife values. With regard to botanical resources and the less mobile aquatic animal species, however, even small sites can represent viable situations. Even these represent management problems, and the long term viability of such preserves is unknown.

Availability (i.e., willing sellers) is a major issue in this regard, and acquisition efforts will likely need to address sites with willing sellers before others. With a severely limited universe of sites containing known high quality resources, however, theoretical acquisition priorities should be determined on the basis of biological site quality, plus the degree of imminent threat, size and location, and defensibility/manageability.

In spite of the numerous parameters identified as being relevant to site quality (including the extreme variability within some), one level of preservation priority must address the different sensitive species at issue. Specifically, separate priorities should be identified for each species of major concern, in addition to sites with species ensembles or extensive wetland habitat. For example, while there may be a number of good potential preserve sites that contain one particular species, preservation priorities should recognize the need for preservation of other species occurrences, even if they occur on smaller, more degraded properties. Similarly, the full geographic distribution of any given sensitive species should be considered in prioritizing acquisitions. Consideration should be given to the range of soil types and hydrological systems, with all significant situations represented in the eventual preserve system, rather than simply acquiring several large parcels in one particular area or in one (more common) situation.

The ultimate preserve system needs to include the full range of soils and habitat conditions, good geographic representation, and as many large undisturbed properties as possible. Once a regional analysis of the remaining sites is made and the various location, quality, and site characteristics are sorted into categories that need to be represented, the superimposing of availability will likely result in a relatively short list of priority sites. Finally, even with all of the data collection, site evaluations and comparisons that are possible, the ultimate acquisition of properties for inclusion into the regional wetland preserve system will likely hinge upon availability, acquisition funding, and professional judgment.

#### 4.4 Priorities for Restoration

There is an abundance of land in the study area that is suitable for restoration. The greatest potential is land that has suitable clay soil and relatively undisturbed topography and hydrology. Grazing lands, irrigated (but ungraded) hayfields, and lightly cropped properties represent the best opportunities for restoration in that simple removal of the current disruptive land uses would probably result in considerable natural recovery of the wetlands on these lands. Some active restoration efforts may be necessary to remove well established weeds and reestablish native plant species, but with natural drainage patterns and suitable soils still intact, such efforts could be highly successful.

Lands which have been disked, cultivated, graded or filled may also have potential for restoration, but closer investigation would be warranted to determine the potential degree of recovery possible before embarking on major restoration efforts. If soils and/or hydrology have been altered, restoration may be much more difficult if not impossible. Minimally altered topography can often be returned to suitable terrain for wetlands, and even much of the region's cultivated Clear Lake clay could be reconfigured to foster wetland formation.

A distinction should be made in relation to restoration in that the reestablishment of true vernal pool communities may not be possible in some situations, while other seasonal wetland habitats and values may be attainable. Each type of wetland has its own inherent values, and restoration efforts should recognize that some sites offer potential for some types and not others. Restoration efforts, therefore, need to clearly identify the goals and types of habitats to be established, and sites being considered for restoration need to be examined with the various levels of potential in mind. Where vernal pools per se are involved, more rigorous site investigations may be warranted to determine suitability and to direct the design work. Greater detail may be needed in designing a new drainage/habitat reconfiguration that truly represents the pre-disturbance grades and avoids situating the restored pools on previously non-wetland ground.

In response to several recent development projects, wetland habitat creation has also been attempted on the Plain. Such habitat creation occurs on land where minimal wetlands now exist and where historic wetlands may not be evident. If suitable soils and terrain are available, such efforts can result in the establishment of valuable wetland communities. This type of effort generally requires significant soil removal and careful grading to attain a shallow layer of loam over clay, configured in low gradient swales and basins. Details of habitat creation efforts are not presented here, but such efforts constitute a potentially useful means of retaining net wetland acreage in the study area as well as providing suitable new habitat for native plants and animals.

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